RADIO NEDERLAND

Happy Station

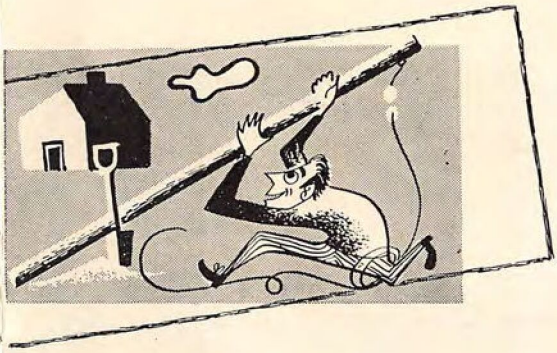
Invitation

YOU hear from us every day –
WE should like to hear from YOU
Why?
Because we should like to know the success
YOU have in tuning in to us
how YOU react to what we say and play
YOUR suggestions
YOUR criticisms
YOUR record requests
any questions YOU may have for 'Letterbox'
We'd like to feel that there is a bond between us
NOT just a one-way channel
So
drop us a line from time to time
because it's good to know
that you're still there
YOU – the fireside listener by your loudspeaker
YOU – the enthusiastic 'ham'
listening on your 'cans'
ALL of you hearing us –
us here in Holland

Address your mail to:
International Service

Radio Nederland

P.O. Box 137, Hilversum
The Netherlands



A few hints on the erection of aerials

Every listener knows that the reception of programmes broadcast by distant shortwave stations is often weaker and less distinct than that of nearby stations operating in the medium and long wave bands. In addition, there are many kinds of "disturbances" which spoil reception.

How can reception be improved, providing, of course, that the receiver itself is functioning properly? The answer is simple: make sure of receiving as much as possible of the desired "signal", accompanied by minimum disturbance.

Enthusiastic comments are often received from listeners who have enjoyed brilliant reception on a set, the only aerial (antenna) of which has been a short length of wire connected to the appropriate terminal, and with the other end suspended "somewhere" in the room. When reception subsequently deteriorates, however, this is either blamed on the transmitting station in question or ascribed to a fault in the receiver. But the real fact is that too little attention has been paid to one of the major factors governing good reception – the aerial.

Before actually describing the various types of aerials, a little may be said about the different kinds of interference which most frequently spoil listening pleasure.

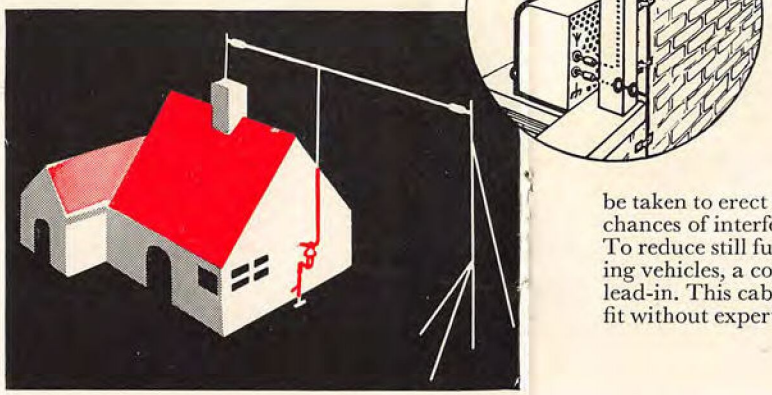
Unfortunately, nothing can be done to counteract atmospheric disturbances such as crackling noises, which are due to natural electrical phenomena. Even the finest receiver fitted with the most suitable type of aerial is just as susceptible to those as any other set.

Then there are other forms of disturbance, manifesting themselves in buzzes, rustles, crackles, hisses, and so on. Those are

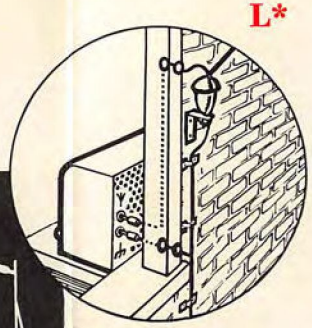
generated by other electrical equipment in the immediate vicinity, such as electro-motors, the ignition systems of cars and generators, fluorescent lightning, neon signs, etc. If possible, installations of this type should be fitted with anti-interference devices, and your own radio dealer or mechanic is certain to be able to advise you in this respect. But often the listener will have to resort to an aerial system which is less susceptible to this type of interference. This is something we will deal with at greater length later on.

Special attention must be paid when the interference is due to "jamming" by another station operating on about the same wavelength as that of the desired transmitter. If both these stations lie in more or less the same direction, "seen" from the point of view of the listener, then there is little or nothing that can be done to improve matters. But if the angle between the two stations is sufficiently wide, an improved aerial system of the directional type, more receptive to signals transmitted from a certain direction, may prove effective. It is true, of course, that even a perfect and expensive aerial system does not provide a 100% guarantee of good reception under all conditions, but many unwanted noises can be eliminated by the listener himself.
We will now describe two types of aerial, i.e. directional and non-directional.

Aerials having little or no directional effect



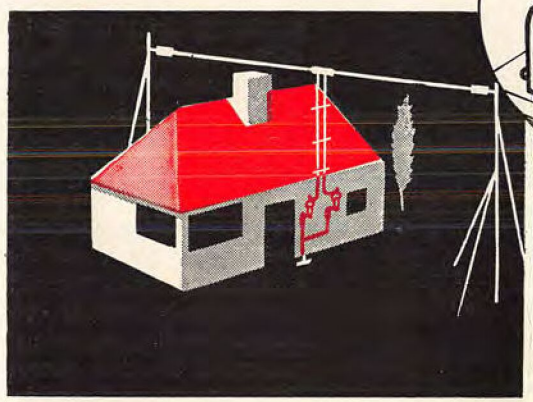
L*



A length of wire of between 10 and 15 metres (30–45 feet) should be suspended horizontally from one or more masts between insulators. To it should be attached a lead-in wire which is connected, in turn, to the receiver. The aerial is known as an "L", "T", or Windom aerial, depending on the point at which the lead-in is connected.
If only one mast is used, the aerial may be connected diagonally to some point on the house.
Vertical aerials are also used sometimes.
The higher the aerial (at its highest point), the stronger will be the signals received. If the building housing the receiver is covered with a metal roof, then the aerial should be higher than would be required in the case of a normal non-metal roof. In addition to ensuring that the aerial is as high as possible, steps should be taken to erect it as far away from the road as possible, so as to reduce the chances of interference from passing vehicles.
To reduce still further any interference from electrical equipment and passing vehicles, a coaxial cable may be used, instead of ordinary wire, for the lead-in. This cable is fairly expensive, however, and is generally difficult to fit without expert assistance.

*) for L (lightning conductor), see page 7

Directional aerials



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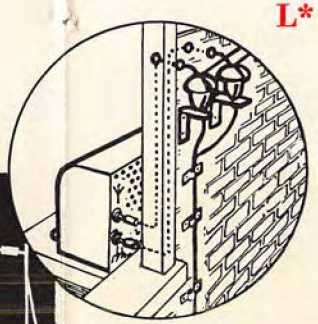

There are many types of directional aerials. The majority are not only directional, but are also designed for maximum reception on a certain wavelength. The latter is governed by the length of the aerial. The simplest type in this category is the dipole or double aerial:
The horizontal wire should be broken in the centre, and a twin wire should be connected at this point, i.e., double flex or two separate wires connected at regular intervals by insulators. This twin lead-in is then connected to the receiver via two lightning conductors ("aerial" and "earth"). Judging by the reports received from many listeners, we can strongly recommend the dipole aerial.
If one wishes to concentrate on improving reception on one particular wave band, the dipole should be made to correspond with the wavelength in question. This can be achieved by ensuring that the dipole is half the length of the actual wavelength, so that one-half of the dipole is equal to one-quarter of the wavelength. Using this principle, the aerial can be "tuned" to any desired band according to the following table:

Band	*Length of each half of the dipole*	*Band*	*Length of each half of the dipole*
13 m	3.30 m or 10′10″	25 m	6 m or 19′10″
16 m	4 m or 13′2″	31 m	7.40 m or 24′4″
19 m	4.70 m or 15′4″	49 m	11.70 m or 38′6″

Direction of aerial

But, as has already been stated, the direction from which reception is desired is also of great importance. The direction of maximum reception is at right angles to the direction in which the dipole aerial is set up.
The following table gives a few examples of the direction in which the aerial should be set up to obtain the best possible results from transmitters in the Netherlands or in a country adjacent to the Netherlands:

Location of receiver		Direction of dipole aerial
Africa	East	Northeast-Southwest
	West, South	East-West
America	Canada, Caribbean Area, U.S.A	Northwest-Southeast
Asia	South	Northeast-Southwest
Australasia	Australia, New Zealand	Northeast-Southwest
Europe	Great Britain, Ireland	North-South
	Scandinavia	Northwest-Southeast

Jamming or interference from another station can, as a rule, be adequately counteracted with the aid of a well-positioned dipole providing the geographical angle between the two stations is wide enough. To prevent any misunderstanding, we would like to point out, however, that the reception of broadcasts on another wavelength and from a different direction from that for which the dipole was erected, will be no weaker than if a normal aerial had been used.
In the majority of cases, listeners will find that a dipole aerial also offers greater protection against interference occasioned by electrical equipment, neon signs and passing vehicles.

Some general hints

The letters "L" in the foregoing illustrations indicate lightning conductors. This component, which has nothing whatever to do with improved reception, is nevertheless indispensable for all outside aerials, in order to prevent damage or accidents should lightning strike the aerial. It is recommended that a good make of lightning conductor be fitted, paying special attention to the manufacturer's instructions. The earthing wire connected to these conductors must be kept completely outdoors. A metal plate, providing it is buried deep enough (at least 50 cm, or 20 inches), or a metal rod (at least 1 metre, or 3 feet, long) hammered into the ground, will serve as an earth. In view of the danger of rusting, a copper or cuprous steel tube is most suitable. A separate piece of wire should be used to connect the earth socket or terminal of the receiver with the earth of the lightning conductor. The receiver earth may also be connected to the water mains. On the other hand, reception is sometimes better when the receiver earth is not connected up at all. This is something which every listener must decide for himself by experiment.

If the receiver is not provided with an earth socket or terminal, then this has purposely been omitted by the manufacturer. Read the instructions for use carefully and remember that no attempt should be made under any circumstances to attempt to "earth" the set via any of its metal parts!

The poles, or masts, to which the aerial is attached should stand firm. Use guy ropes if necessary. The aerial should not be attached to the top of a tree, as trees tend to sway too much in the wind, which could lead to the aerial breaking under the strain.

A directional aerial, such as the dipole, serves no useful purpose on board ships. An "L" aerial, hung as high as possible, is more effective. A joint aerial system is better when there are several receivers on board.

Should your friends be interested in obtaining a copy of this pamphlet, we shall be happy to send them one.

Do you feel that erecting an aerial, in spite of the hints in this pamphlet, is a complicated business?
Do not worry, manufacturers of receivers and wireless components have provided for this exigency, and complete construction outfits for aerials for short-wave reception are now on the market at moderate prices. You should experience very little difficulty with one of these outfits. Ask your nearest radio dealer or importer.
If he is unable to assist you, please do not hesitate to let us know, and we will arrange for a manufacturer to contact you directly.

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